

A NOTE ON THE RORQUALS (*BALAENOPTERA* SPP.)

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(With three plates)

SYNOPSIS

An attempt is made to analyse the published records of rorquals (*Balaenoptera* spp.) stranded on the coasts of India and Ceylon with the object of determining the species occurring in this area. Positive identifications apparently exist for only one species, the Blue Whale, *B. musculus* (Linn.). It seems highly probable, but not certain, that two others, the Fin Whale, *B. physalus* (Linn.), and the Piked Whale, *B. acutorostrata* Lacép., also arrive here at least occasionally. The great majority of the records are merely generic, and to assist in the production of more precise identifications in the future a brief account is given of the external characteristics of the five known living species. The paper finishes with a summary of the records from the Malaysian sub-region, which includes the seas immediately to the east of the northern Indian Ocean.

THE RORQUALS KNOWN FROM THE COASTS OF INDIA & CEYLON

In a recent number of this journal N. G. pillai (1949: 358) provides an interesting note on an immature rorqual caught alive off the coast of Bombay on 12 April 1949. Unfortunately no specific diagnosis is given. The balance of probability is that the specimen was a Lesser Rorqual, *Balaenoptera acutorostrata* Lacép., but this cannot be regarded as certain on the information available. Similarly, the list of whales stranded on the coasts of India published by S. T. Moses (1947: 377-8) includes only two precise identifications of *Balaenoptera* spp. in a total of more than 25 strandings. The two that Moses cites are an immature Blue Whale, *B. musculus* (Linn.), length about 35 feet, which came ashore at Nirodumunai (Ceylon) in 1932, and a specimen described as '*B. edeni*' which is said to have been stranded in the Sittang estuary in June 1871. *B. edeni* (Anderson, 1878: 551-64) is a synonym of the Piked Whale or Lesser Rorqual, *B. acutorostrata*, but this does not give us a definite record for the latter mammal on the Indian coast as Sittang is situated in Burma, about 75 miles east of Rangoon.

In addition to the Nirodumunai whale cited by Moses, Dr. A. Aiyappan tells me (*in litt.*, 18-3-49) that the Madras Museum contains an entire mounted skeleton of *B. indica* Blyth (= *B. musculus*) which came ashore at Mangalore in 1874. I am also strongly of the opinion that the 61-foot whale figured by Kinnear (*in Prater*, 1915: 577), which was stranded at Viziadrug near Ratnagiri in August 1912, belonged to this species. No doubt also any of the additional records on Moses's list with lengths of over 80 feet can fairly safely be ascribed to it; these are Quilon 1848, Amherst Island (Arakan = Burma again) 1851, Quilon 1858, near Cherai (Cochin) November

1927, between Suratkal and Moolki 1939, and probably Mulvel (Okhamandal) March 1939. The last of these must be treated with some reserve, as the whale is said to have been 79 feet long but with a flipper length of only 6 feet (see Moses 1941: 896); this is much too short for any rorqual with the body length quoted. Similarly I have not included the 160-foot whale, Pondicherry 1757, cited by Moses from Ananda Ranga Pillay's diary, as the length given is too large for any known species. Even without these last two records, however, we have ample evidence that the Blue Whale, *B. musculus*, does come ashore at intervals on the coasts of India and Ceylon.

There is also, in my opinion, a fairly definite Indian record for the Fin Whale, *B. physalus* (Linn.). This is the 41-foot whale reported by Prater (1915: 576) which was stranded at Dhabool, 9½ miles south of Bombay, on 11 December (?) 1913. It is not, seemingly, listed by Moses. Prater identifies it as *B. indica*, but from the description of the colouring and the size of the flippers (measuring 1/9th of the total body length) it must almost certainly have been an example of *physalus*. Probably, though there is no direct evidence to show this, some of the other records attributed non-specifically to 'rorqual' belong to the Fin Whale. The information by which the different *Balaenoptera* spp. can be distinguished from each other is not readily available, but the genus as a whole can be separated from any others occurring in these waters without much difficulty. As a result many identifications have no doubt been left at the level of rorqual on the assumption that that was as far as the matter could be carried.

The rorquals are a group of whalebone whales distinguished from all other members of the sub-order Mysticocœti by a particular combination of a few characters. They have a series of parallel grooves or 'pleats' on the chin, throat and pectoral region, a dorsal fin and fairly short flippers (equal to about 1/7th, or less, of the total length). Taken together, these features are diagnostic of the genus. Five species are known. From the three paragraphs above it would appear that we have undisputed records of only one of these, the Blue Whale, from the coasts of India and Ceylon. On the other hand it is probable that at least two others, the Fin Whale and the Piked Whale, have occurred in our area. Any of the five might reach this region during their wanderings in tropical waters. Even Bryde's Whale, *B. brydei* Olsen, which seemed to Olsen to be confined to the cooler waters off South Africa, from Angola to Natal, has been reported from Granada in the West Indies (Norman and Fraser, 1937: 235). It would accordingly appear to be of general interest to give a summary of the external characters of the known rorquals, in the hope that on future occasions it may be possible to obtain more precise identifications.

The sizes of the living rorquals can be shown most satisfactorily by the following table, taken partly from Gibson-Hill (1948: 61) and, in the case of the whales of commercial importance, based originally on the 'Discovery' Reports (1929, continuing). The lengths given are measurements in feet from the tip of the snout to the notch of the tail flukes. Oil yields are only very approximate estimates, as there

is considerable individual variation: as an example, one might refer, to Olsen's statement (1913: 1079 and 1083) that in Bryde's Whale the yield ranges from 2-3 barrels in an ill-conditioned animal to 15-20 barrels in a very fit one. The highest recorded yield for any species is 305 barrels taken from a Blue Whale flensed at Walvis Bay, South Africa. The measurements of length are as follows:

Species	Approx. length at birth	Average length at sexual maturity		Approx. maximum length	Average oil yield in barrels	Approx. ratio of flipper length to total length
		Male	Female			
<i>B. musculus</i> ...	23	74	77	100	100	1/7
<i>B. physalus</i> ...	21	63	65	82	50	1/9
<i>B. borealis</i> ...	15	44	48	60	17	1/10-1/12
<i>B. brydei</i> ...	? 12	about 30-35		48	8	1/10-1/12
<i>B. acuto-rostrata</i> ...	? 9	about 25-30		33	...	1/8

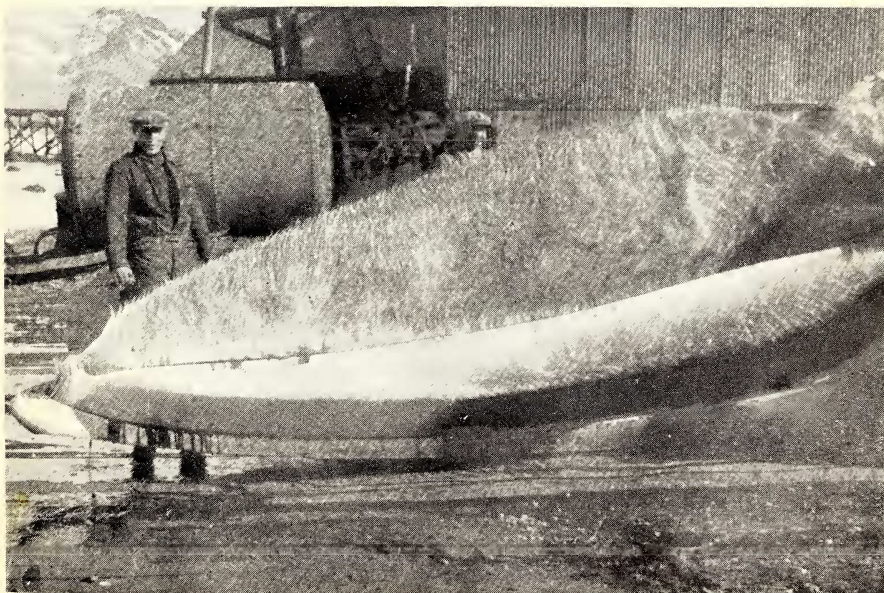
The following are the principal external features distinguishing the five species: the data is taken partly from Norman and Fraser (1937: 218-41) and, in the case of Bryde's Whale, from Olsen (1913: 1073-81). The general colouring and the size and position of the dorsal fin can be used, under favourable conditions, in determining the identity of a rorqual seen at sea. In a stranded specimen attention should also be paid to the grooves on the throat, the size of the flippers and, above all, the form and colouring of the baleen plates. There are also differences in the agility, speed and manner of movement among the larger rorquals at least, but no attempt is made to go into these points here. A certain amount of experience at sea in areas where whales are relatively numerous is essential before the distinctions can be mastered adequately. As in all cases of identifying freely-moving animals, the faculty can only be acquired by practice, and continued practice is needed to maintain it. In the early part of 1946 I was able to separate the three large rorquals at a moderate distance and under reasonable conditions. Now I would not like to attempt to do so. Regular whalers, on the other hand, habitually spot the species and gauge the approximate length, rapidly and surely, except in the case of the Sei and Bryde's Whales, which have even been confused on the flensing platform. Apart from this one instance, no appreciable difficulty is likely to be experienced in identifying a stranded or beached whale, using the points given below. Observers should, however, remember that the body colour, as in man, is affected by post-mortem changes, but there is little immediate alteration in the colouring of the baleen plates.

The Blue Whale or Sibbald's Rorqual *Balaenoptera musculus* (Linn.).

This species has a relatively longer head than other rorquals, with the sides almost parallel for part of their length. The general colouring is a dark slate blue, with the tip and under surface of the flippers whitish; but there is some individual variation in the colour-



An adult Fin Whale, about 70 feet long, being pulled on the deck of a factory ship off the South Shetlands.



Photos

C. A. Gibson-Hill

The upper jaws and baleen plates of a Fin Whale, about 65 feet long, seen from below.



Photo

A fetal Fin Whale, about 6 feet long, removed from a dead cow on the flensing platform, Leith Harbour, South Georgia.

C. A. Gibson-Hill

ing and it may be modified by paler mottling. Whales which have been resident in cold waters for a long period often acquire a covering film of diatoms. This may be so thick as to make the under parts appear glaucous or even yellowish, a feature which has earned for it the alternative name of 'Sulphur-bottom'. The dorsal fin is low, small and placed well back towards the tail. The flippers are long and tapering, measuring about $\frac{1}{7}$ th of the body-length. There are usually about 80-100 ventral grooves, and in the mid-line they extend back to the umbilicus, about half-way between the planes of the flippers and the dorsal fin. The baleen plates, including the fringes on the frayed inner border, are jet black; this feature is characteristic of the species. The synonyms used in the literature of our area include *sibbaldii* (Gray), *indica* Blyth and 'Great Indian Fin Whale.'

The Fin Whale or Common Rorqual *B. physalus* (Linn.).

The head in this and the next two species appears wedge-shaped when seen from above. The general colour of the Fin Whale is grey above and white below, including the under surface of the flippers and tail flukes, but the pattern is slightly asymmetrical in the region of the head and shoulders. The outer surface of the right lower jaw and the side of the neck is white, while the left lower jaw and adjacent areas of the neck are grey. Inside the mouth the change is reversed, the right side of the lower jaw and the neighbouring part of the tongue are pigmented, while on the left side these areas are without colour. This feature is characteristic of the species. The dorsal fin is fairly tall and triangular in shape, while behind it is a sharp-sided median ridge. The flippers measure only $\frac{1}{9}$ th of the total bodylength. There are usually about 60-90 ventral grooves, running back to the umbilicus as in the Blue Whale. The baleen plates share the asymmetry of colouring of the jaws. The plates on the right side, for about one-third of the distance back from the tip of the snout, are white; the remainder on that side and all those on the left mandible are a dull blue-grey streaked with pale ash-grey and yellowish grey. The fringes are in all cases yellowish white. The synonyms used in the literature of the Indian Ocean include *australis* (Des.), *blythii* And. and 'Razor-back.'

The Sei Whale or Rudolphi's Rorqual *B. borealis* Less.

The dorsal surface is a bluish black, with the flanks grey and an area on the under surface, stretching back from the chin, white; the extent of this white patch varies to some extent individually, but it never runs as far as the tail and the under surface of the flippers and flukes is always dark. The dorsal fin is relatively larger than in the preceding two species and placed further forward. On the other hand the flippers are still smaller and measure only about $\frac{1}{10}$ th- $\frac{1}{12}$ th of the total body-length. The ventral grooves range from 36-60 and extend only as far back as a point about midway between the line of the flippers and the umbilicus. The baleen plates are mainly black, with the frayed inner edges white; the latter are quite characteristic, being much longer, softer and silkier than in any of the other rorquals. The synonyms include *schlegelii* (Flower).